USDA United States Department of Agriculture

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WLFW works with private landowners to improve and restore western rangelands. Photo: Jeremy Roberts, Conservation Media.

Quantifying Outcomes From NRCS 'Working Lands for Wildlife' Enhances Conservation Effectiveness

In Brief:

- Working Lands for Wildlife—USDA's premier approach to benefiting producers and at-risk wildlife on America's agricultural lands—relies on science to pinpoint where to invest limited resources, evaluate resulting outcomes, and improve conservation delivery.
- On America's vast western grazing lands, Working Lands for Wildlife has partnered with the USDA Conservation Effects Assessment Project to **co-produce 37 peer-reviewed research studies over the past decade** that document outcomes from Farm Bill-funded conservation practices on rangelands.
- Quantifying conservation outcomes and putting science into the hands of practitioners helps to maintain productive and profitable rangelands for people and wildlife.

Background:

The agricultural rangelands that span the western United States generate economic revenue for rural communities and produce food and fiber for the nation. These rolling grasslands, silvery sagebrush flats, and green meadows are also home to world-class wildlife populations, including hundreds of different kinds of birds, fish, mammals, reptiles, and amphibians.

It can be challenging for ranchers to maintain these grazing lands for future generations, especially when faced with drought, development, and commodity price swings. Conserving America's vast working rangelands requires a proactive, collaborative, landscape-scale approach that keeps agricultural operations profitable and wildlife habitat productive.

In 2012, the USDA's Natural Resources Conservation Service (NRCS) launched Working Lands for Wildlife to strategically target existing Farm Bill-funded conservation programs in at-risk areas. In the West, that includes sagebrush rangelands and the Great Plains. WLFW's voluntary and incentive-based model has gained momentum on these western grazing lands. NRCS and its **partners have collaborated with 2,154 ranchers to conserve 7.5 million acres**, an area three times the size of Yellowstone National Park.

Science has played a pivotal role in achieving this unprecedented scale of conservation. WLFW relies on science-based targeting tools to: 1) pinpoint where to invest limited resources, 2) evaluate outcomes to quantify the results, and 3) improve conservation delivery to benefit people and wildlife. The NRCS Conservation Effects Assessment Project has been a key partner in assessing WLFW outcomes and in developing targeting tools that help landowners and practitioners make informed conservation choices.

> "Taking a team approach to quantify conservation outcomes brings accountability for taxpayers, and also illustrates the important role of science in keeping our nation's working lands productive."
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> ~ Charles Rewa, NRCS Resource Inventory and Assessment Division

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Conservation Outcomes:

CEAP has partnered with WLFW to evaluate the impacts of Farm Bill practices on wildlife, water, soil, vegetation, and other natural resources on America's western rangelands. Over the past decade, CEAP and WLFW have co-produced 37 peer-reviewed research studies that document outcomes from the following conservation activities:

- Prescribed grazing
- Wet habitat restoration
- Conservation easements
- Woodland management
- Fence collision solutions for wildlife
- Remote-sensed mapping of rangeland vegetation cover and productivity

Removing Woody Species to Restore Grazing Lands: Woody species like mesquite, juniper, and redcedar are taking over sagebrush shrublands and prairie grasslands. Woodlands have expanded by six-fold on some rangelands over the past century. These invading trees reduce water availability, diminish soil nutrients, and decrease forage for livestock and wildlife. Research shows that lesser prairie-chickens won't nest in grasslands with more than 2% tree cover, and greater sage-grouse avoid nesting in areas with more than one tree per acre.

WLFW has helped landowners restore rangelands by strategically removing encroaching woody species on 780,000 acres of prime grazing lands in the western U.S.

✓ **Greater sage-grouse population growth rates are 12% higher** in grazing lands where advancing trees have been removed. Within three years of conifer treatments, 29% of studied sage grouse hens were nesting within and near restored grazing lands.

✓ **Songbird abundance doubled** following tree removal in sagebrush landscapes for at-risk species like the Brewer's sparrow, green-tailed towhee, and vesper sparrow.

Conservation easements help keep valuable sagebrush habitat intact which benefits more than 350 species of wildlife. Photo: Jeremy Roberts, Conservation Media.

Stemming the Loss of Intact Rangelands: The greatest threat to ranchers and wildlife is the loss of productive grazing lands as they become fragmented by development, crop cultivation, or other uses. Since the majority of rangelands are privately owned, voluntary incentive-based conservation easements are an important tool for keeping working ranches intact for future generations. In Montana and the Dakotas, findings suggest that additional cultivation of intact sagebrush grazing lands would decrease the region's populations by 5-7%. In Wyoming, estimates show that a $250 million investment in targeted easements can slow grouse declines by nearly two-thirds within population strongholds.

WLFW has secured over 200 individual easements that conserve 567,100 acres of ranchlands, and also implemented improved grazing strategies to improve 3.6 million acres of prime rangelands. In Montana alone, partners have protected 190,000 acres of at-risk grazing lands since 2010, a six-fold increase in easements over all prior years.

✓ **Conservation easements on working lands increased 1,800%** from 2010-2013, permanently protecting sagebrush country from fragmentation.

✓ Easements put in place in Wyoming for sage grouse also **conserved 75% of priority mule deer habitat** for two world-class populations of this valuable game species.

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Wet Habitat Restoration: On the dry rangelands west of the Mississippi River, conserving scarce water resources is essential for sustaining people, livestock, and wildlife. Restoring degraded creeks, springs, and wet meadows and protecting intact wet habitat adds immense value to grazing lands. These emerald islands attract a host of wildlife and livestock seeking food, water, and shelter as uplands dry out late in the summer. During the summer, wet habitats cover less than 2% of the landscape, but more than 80% of these vital resources are located on privately owned ranchlands. Research shows sage grouse cluster 85% of their breeding sites within 6 miles of wet habitats in order for hens and chicks to access "green groceries" near water in the late summer and fall.

WLFW and its partners have led 11 hands-on field workshops that trained more than 400 resource managers and landowners to use simple, cost-effective methods that restore precious wet habitat.

✓ Low-tech methods of restoring wet habitat (such as hand-built stone structures, mimicking beaver dams, or grazing management) increase vegetation productivity by up to 25% and **keep riparian areas greener longer.**

Conclusions:

Incorporating science and focusing on conservation outcomes improves the efficiency and effectiveness of Farm Bill programs so that they achieve the biggest benefits for wildlife, rural communities, and agricultural operations. By putting science directly into the hands of conservation practitioners, CEAP and WLFW are helping to maintain productive and profitable rangelands throughout the American West.

Science In Action:

Science doesn't influence on-the-ground conservation unless research findings are accessible by the land managers who prioritize and plan projects. CEAP and WLFW help bridge the gap between science and implementation by creating easy-to-use technology and tools that empower ranchers and resource managers to effectively conserve grazing lands.

One example is the Rangeland Analysis Platform (RAP), a free online tool powered by Google's Earth Engine. RAP merges decades of field data and remote satellite imagery to show how rangeland plant cover has changed at the watershed, ranch, or pasture scale.

Source:

Naugle, David E., et. al. 2019. CEAP quantifies conservation outcomes for wildlife and people on western grazing lands. Rangelands.

Hands-on training and workshops are one way SGI helps conservation professionals and landowners learn new techniques for restoring wet habitats. Photo: Jeremy Maestas, SGI.

Working Lands for Wildlife, led by USDA's Natural Resources Conservation Service, is a partnership- based, science-driven effort to proactively conserve America's working agricultural lands and wildlife.